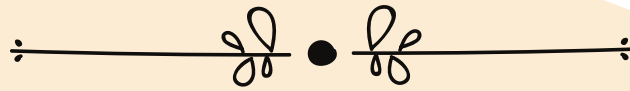


BIOHACK NOTES



ORGANISMS AND POPULATIONS

- BASED ON ACTIVE RECALL AND SPACED REPETITION
- TARGET 360/360 IN NEET BIOLOGY & 100/100 IN BOARDS!



PARTH GOYAL





• INTRODUCTION

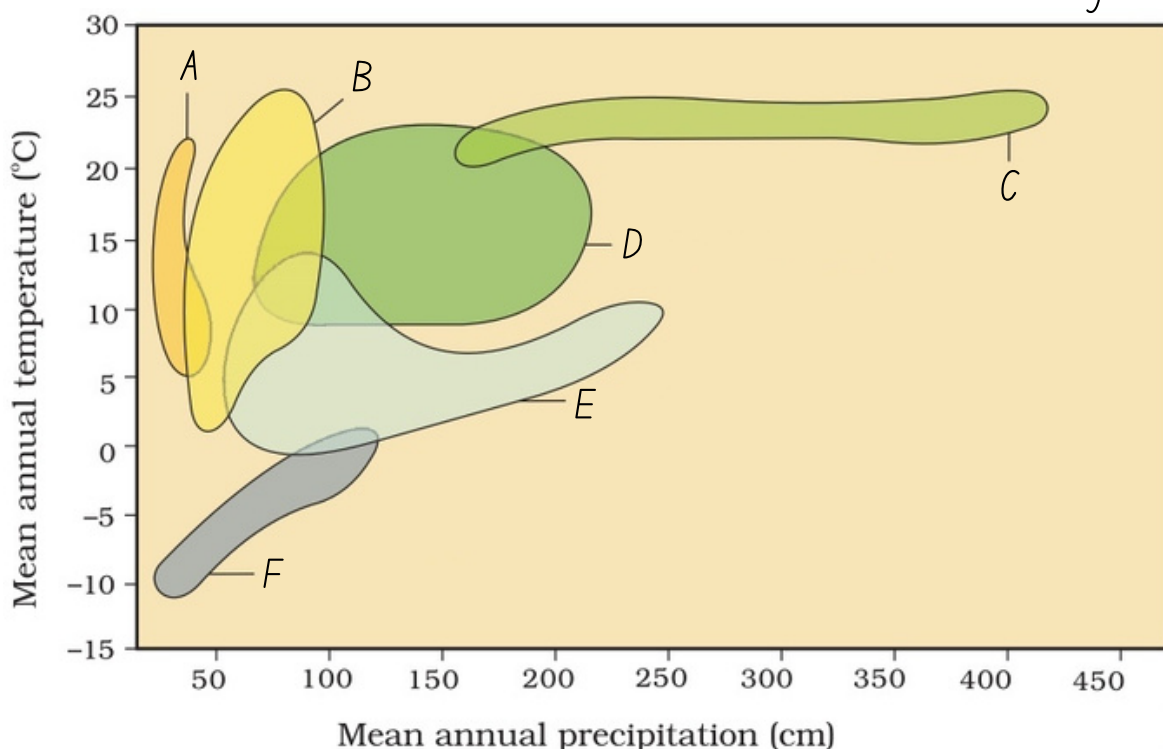
1. _____ is revered as the Father of Ecology in India. (NEET)
2. Arrange the various level of biological organisation in ascending order - (9)
3. Ecology is concerned with which 5 levels of biological organisation ?



• ORGANISM AND ITS ENVIRONMENT

4. Ecology at organismic level is essentially _____
5. Precipitation includes both rain and snow. T/F
6. Our intestine is a unique habitat for hundreds/thousands of species of microbes.
7. Name the abiotic factors that result in formation of different habitats (4) -
8. What is a niche? (NEET)
9. Most ecologically relevant environmental factor is -
10. Mangoes cannot grow in tropical/temperate countries like _____ and _____
11. Snow leopards are not found in _____ forests.
12. Tuna fish are rarely caught beyond tropical/temperate latitudes.
13. Snow leopards are found near _____ and _____
14. Organisms which can thrive on wide range temp. called -
15. Restricted to narrow temp. range called -
16. < ___ salt is present in inland water.
17. ___-___ salt is in the sea.
18. > _____ salt is in hypersaline lagoons.

DigaQ. 1



DigaQ. 2

A



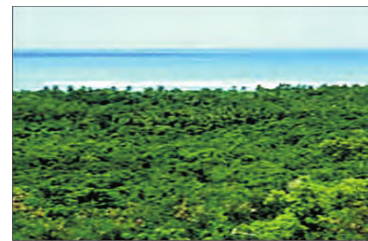
B



C



D



19. Organisms tolerating wide range of salinities -

20. Tolerating only narrow range of salinities -

21. _____ and _____ are adapted to photosynthesise optimally under very low light.

22. Soil composition, grain size and aggregation determine the _____ and _____ of the soils.

23. Sediment characteristics often determine the type of _____ animals that can thrive there.

24. Success of mammals is because - (1)

25. 99 % of animals are regulators/conformers.

26. Nearly all plants cannot maintain a constant internal environment. T/F

27. Thermoregulation is energetically expensive for small/large animals.

28. Small animals find it very hard to live in colder areas. T/F

29. Every winter, thousands of migratory birds come from _____ to _____ (NEET)

30. Ex. of hibernation - (1)

31. Ex. of aestivation - (2)

32. Stage of suspended development is called _____ and is seen in _____

33. _____ in North/South American deserts can meet his water requirements through fat oxidation. (NEET)

34. Kangaroo rat however cannot concentrate its urine. T/F

35. In _____, photosynthetic function is taken by flattened stems.

36. Define Allen's Rule.

37. Thick layer of fat in seal is called _____

38. Rohtang Pass is near Manali and Leh. T/F (NEET)

39. Symptoms of altitude sickness are - (3) (NEET)

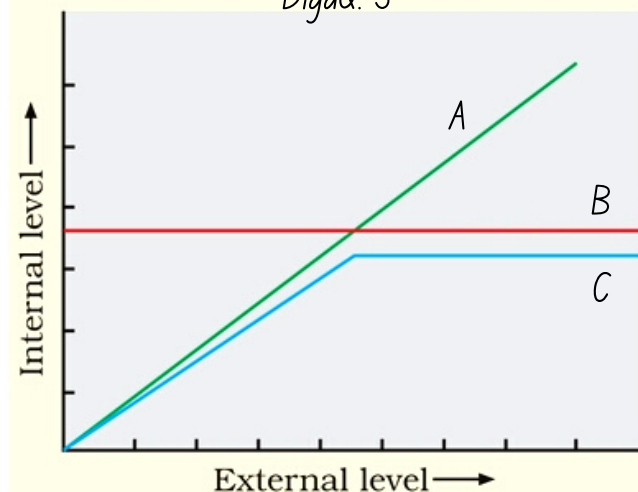
40. Body acclimate to low oxygen at high altitude

by - (3) (NEET)

41. Ex. of animal having behavioural response to change (abiotic) in environment is - (1) (NEET)

42. _____ bask in the sun, and move to shade according to change in body temperature.

DigaQ. 3



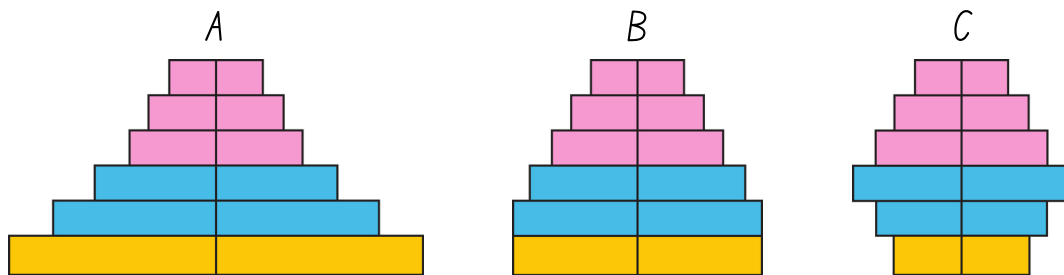
PARTH GOYAL



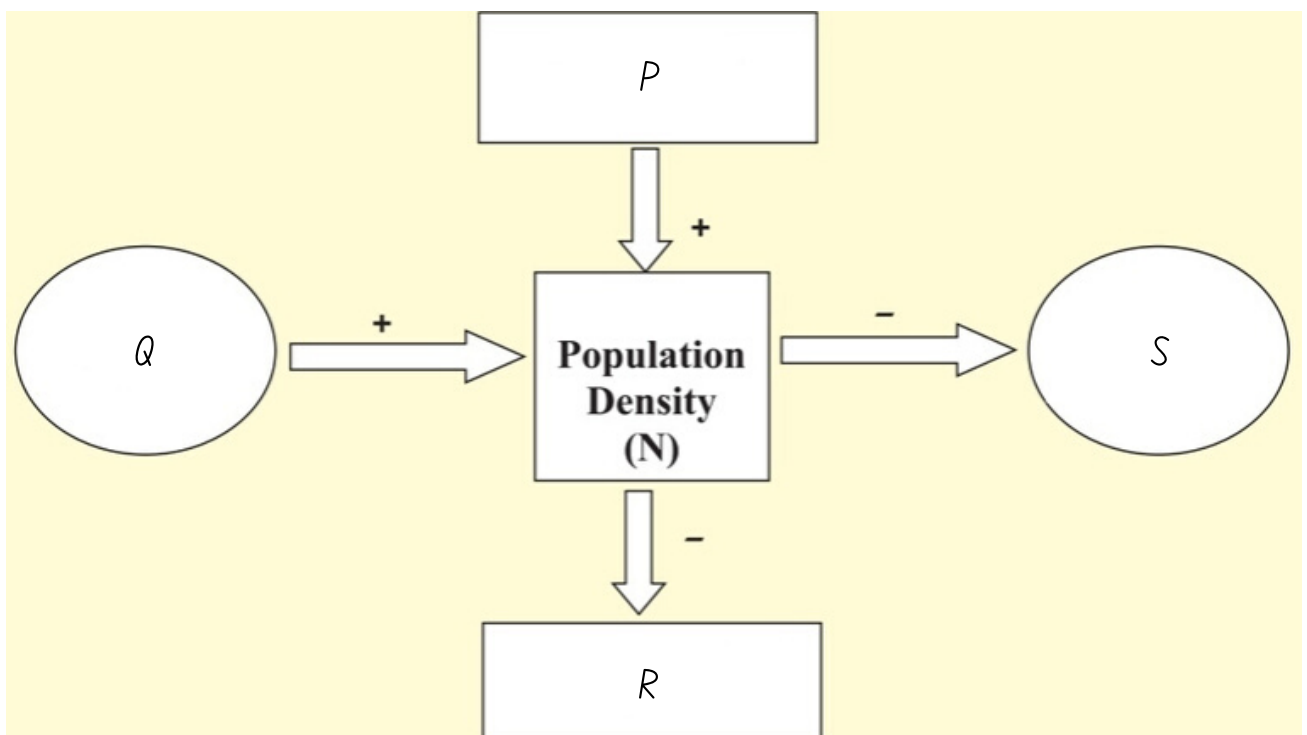
• POPULATIONS

43. Natural selection operates at organism/population level.
44. _____ cranes are found in Bharatpur wetlands.
45. The tiger census in our _____ and _____ is often based on - (2)
46. Exponential growth is arithmetic/geometric growth.
47. In $dN/dt = rN$, r is called -
48. R value for norway rat -
49. R value from flour beetle -
50. In 1981, r value for human population in India was -
51. Exponential growth curve is __- shaped.
52. Logistic growth curve is __- shaped.
53. Population growing in habitat with limited resources show phases (4) -
54. This type of population growth in limited resources is called _____-_____ logistic growth.
55. The logistic growth equation is - (NEET)
56. Organisms which breed only once - (2)
57. Large no. of small sized offspring are produced by - (2)

DigaQ. 4 - Name the type of pyramid.



DigaQ. 5





• POPULATION INTERACTIONS

58. Both species lose in -
59. Ex. of interactions in which one species is benefited and other is not -
60. Interacting species live closely together in - (3)
61. Sparrow eating a seed is a predator. T/F (NEET)
62. _____ act as 'conduits' for energy transfer across trophic levels.
63. Predators keep prey population under control. T/F (NEET)
64. _____ was introduced in Australia in early _____ (year) and became invasive.
65. It was brought under control by introducing -
66. Predators have no function in maintaining the species diversity in a community. T/F (NEET)
67. In the rocky intertidal community of _____ the starfish _____ is an important predator. (NEET)
68. More than ____ (no.) species of vertebrates/invertebrates disappeared after removing starfish due to _____ (NEET)
69. Predators are not prudent. T/F
70. Some frogs are cryptically coloured. T/F
71. _____ and _____ are cryptically coloured.
72. _____ is highly distasteful to its predator. (NEET)
73. Butterfly acquire this distasteful chemical during its _____ stage by feeding on _____ (NEET)
74. Nearly 25 % of all arthropods are phytophagous. T/F
75. _____ are the most common morphological means of defense.
76. Ex of plants which have thorns - (2)
77. Calotropis produce highly poisonous _____.
78. Ex. of chemicals produced by plants for defense but extracted commercially - (5) (NEET)
79. Quinine is used to treat -
80. Strychnine is an alkaloid. T/F
81. It is used to kill pests. T/F
82. According to Darwin, interspecific/intraspecific competition is a potent force in organic evolution.
83. In south american lakes, _____ and _____ compete for their common food, i.e. _____
84. Resources need to be limited for competition to occur. T/F
85. Define competition.
86. The _____ in Galapagos Islands became extinct when _____ were introduced.



Table I

Species A	Species B	Name of Interaction
	+	Mutualism
-	-	
+		Predation
	-	Parasitism
+		Commensalism
-	0	

87. Abingdon tortoises however had greater browsing efficiency than goat. T/F

88. Barnacles are arthropods/molluscs/annelids.

89. Barnacles are insects/crustacea.

90. Superior barnacle was _____ which exclude the smaller barnacle _____

91. _____ did his field experiments on rocky sea coast of _____ on barnacle.

92. Carnivores are more affected by competition than herbivores and plants. T/F

93. Two closely related species competing for the same resources cannot co-exist indefinitely and the competitively inferior one will be eliminated eventually. This statement is called - (NEET)

94. Species evolve mechanism to promote co-existence instead of exclusion. T/F

95. _____ showed that 5 closely related species of warblers avoided competition due behavioural differences in _____ activities.

96. Host and parasite tend to coevolve. T/F

97. Loss of digestive system is seen in parasites. T/F

98. Adaptations found in parasites are - (4)

99. Ex. of a trematode parasite -

100. The intermediate host of liver fluke are - (2)

101. Ex. of ectoparasites are _____ on humans and _____ on dogs.

102. Many marine/freshwater fishes are infested with ecto/endoparasite copepods.

103. Copepods belong to class _____ and phylum _____.

104. Ex. of parasitic plant - (1)

105. Cuscuta don't have leaves and chlorophyll. T/F

106. Female mosquito is a parasite for humans. T/F

107. Life cycle of endo/ectoparasites are more complex.

108. Brood parasitism is seen between _____ and _____ (NEET)

109. In this, the crow is a parasite/host.

110. Breeding season is between _____ to _____

111. Orchids grow as a _____ on a _____ branch.

112. _____ grow on the back of the whale.





113. Ex. of commensalism seen in farmed rural areas is -

114. Sea anemone host _____ which get protected due to _____ on sea anemone.

115. Association between fungus and cyanobacteria can be called lichen. T/F

116. Lichen can form between fungus and non-photosynthesising algae. T/F

117. Mycorrhiza is between _____ and _____ (NEET)

118. Plants provide _____ to fungi.

119. Fungi help in _____

120. Fig is pollinated by _____ (NEET)

121. Female wasp use fruit as an _____.

122. Fig even offers some _____ as food for the larvae.

123. Wasp pollinated the fig inflorescence while searching for suitable _____

124. _____ show bewildering diversity of floral patterns.

125. Orchids are pollinated by - (2)

126. The _____ orchid named _____ employs "sexual deceit".

127. All orchids offer rewards. T/F

128. One petal of its flower bears an uncanny resemblance to the female of the bee in _____, _____, _____.



ORGANISMS AND POPULATIONS



PARTH GOYAL



ANSWERS

• INTRODUCTION

1. Ramdeo Misra
2. macromolecules, cells, tissues, organs, organism, population, communities, ecosystems and biomes
3. organism, population, communities, ecosystems and biomes

• ORGANISM & ITS ENVIRONMENT

4. Physiological ecology
5. T
6. Hundreds
7. temperature, water, light and soil
8. Each organism has defined range of conditions that it can tolerate, diversity in the resources it utilises and a distinct functional role in the ecological system, all these together comprise its niche.
9. Temperature
10. Temperate, Canada and Germany
11. Kerala
12. Tropical
13. Himalayan range and central Asia
14. Eurythermals
15. Stenothermals
16. 5
17. 30-35
18. 100
19. Euryhaline
20. Stenohaline
21. Herbs and shrubs
22. Percolation and water holding capacity
23. Benthic
24. Ability to maintain constant temp.
25. Conformers
26. T
27. Small
28. T
29. Siberia

Keolado National Park (Bharatpur), Rajasthan

30. Bears
31. Snails and fish
32. Diapause, zooplankton species
33. Kangaroo rat, north
34. F
35. Opuntia
36. Mammals from colder climates generally have shorter ears and limbs to minimise heat loss
37. Blubber
38. T
39. nausea, fatigue and heart palpitations
40. increasing RBC production, decreasing binding affinity of hemoglobin and increasing breathing rate
41. Desert lizards
42. Desert lizards

• POPULATIONS

43. Population
44. Siberian
45. Pug marks and fecal pellets
46. Geometric
47. Intrinsic rate of natural increase
48. 0.015
49. 0.12
50. 0.0205
51. J
52. S, sigmoid
53. Lag phase, phase of acceleration, phase of deceleration, asymptote
54. Verhulst-Pearl
55. $dN/dt = rN[(K-N)/K]$
56. Pacific salmon fish, bamboo
57. Oysters, pelagic fishes



PARTH GOYAL

• POPULATION INTERACTIONS

58. Competition
59. Predation, Parasitism, Commensalism
60. Predation, Parasitism and Commensalism
61. T
62. Predation
63. T
64. Prickly pear cactus, 1920
65. Cactus-feeding predator (moth)
66. F
67. American pacific ocean, pisaster
68. 10, invertebrates, interspecific competition
69. F
70. T
71. Frogs and insects
72. Monarch butterfly
73. Caterpillar stage, poisonous weed
74. F, insects would be there instead of arthropods
75. Thorns
76. Acacia, Cactus
77. Cardiac glycosides
78. nicotine, caffeine, quinine, strychnine, opium
79. Malaria
80. T
81. T
82. Interspecific competition
83. Flamingoes and fishes, zooplankton
84. F
85. Process in which "r" is decreased due to presence of other species
86. Abingdon tortoise, goats
87. F
88. Arthropods
89. Crustacea
90. Balanus, Chathamalus
91. Connell, scotland

92. F
93. Gause's 'Competitive Exclusion Principle'
94. T
95. MacArthur, foraging
96. T
97. T
98. Adaptations found in parasites
 - I. loss of unnecessary sense organs
 - II. presence of adhesive organs or suckers to cling on to the host
 - III. loss of digestive system
 - IV. high reproductive capacity
99. Human liver fluke
100. Snail and fish
101. Lice, ticks
102. Marine, ectoparasite
103. Crustacea, arthropoda
104. Cuscuta
105. T
106. F
107. endoparasites
108. cuckoo(koel) and crow
109. Parasite
110. Spring to summer
111. Epiphyte, mango
112. Barnacles
113. Cattle egret and grazing cattle
114. Clown fish, stinging tentacles
115. T
116. F
117. Fungi and higher plant
118. Energy-yielding carbohydrates
119. Absorption of essential nutrients
120. Wasp



121. Oviposition (egg-laying)

122. Developing seeds

123. Egg-laying sites

124. Orchids

125. Bees and bumblebees

126. Mediterranean orchid, ophrys

127. F

128. Size, colour and markings

• DigaQs

DigaQ. 1 – Biome distribution

A – Desert

B – Grassland

C – Tropical forest

D – Temperate forest

E – Coniferous forest

F – Arctic and Alpine tundra

DigaQ. 2 – Major biomes of India

A – Tropical rain forest

B – Deciduous forest

Table 1

Species A	Species B	Name of Interaction
+	+	Mutualism
–	–	Competition
+	–	Predation
+	–	Parasitism
+	0	Commensalism
–	0	Amensalism

C – Desert

D – Sea coast

DigaQ. 3 – Organismic response

A – Conformers

B – Regulators

C – Partial regulators

DigaQ. 4 – Age pyramids for human population

A – Expanding

B – Stable

C – Declining

DigaQ. 5 – Population density

P – Immigration (I)

Q – Natality (B)

R – Emigration (E)

S – Mortality (D)

DigaQ. 6 – Mutual relationship between fig tree and wasp

A – Fig flower is pollinated by wasp

B – Wasp laying eggs in the fig fruit



SCAN AND DONATE US SO THAT WE
CAN CREATE MORE SUCH QUALITY
CONTENT FOR YOU!

